WHAT WE CLAIM IS:

CLAIM 1. A method of treating biomass contained in municipal or industrial biological wastewater treatment sludge, paper-pulp sludge, animal or plant waste sludge, containing intra-cellular water molecules contained in molecular cellular units of the biological waste sludge, comprising:

(a) directing the biomass to an electroporating station;

(b) electroporating the biomass for destroying at least most of the individual cellular units of the biomass in order to release the intra-cellular water molecules contained therein; and

said step (b) causing massive disruption of the cellular matter, allowing for the release of bound as well as intra-cellular liquids and intracellular dissolved/organic matter; and

(c) directing the released intracellular dissolved/organic matter to a bioreactor for performing biological digestion thereon whereby the intracellular, dissolved organic matter is used as food for the bacteria in the biological reactor, whereby the biological digestion process is accomplished.

CLAIM 2. The method according to claim 1, wherein said step(c) comprises delivering the destroyed biomass of said step (b) to at least one of: an aerobic, anoxic, facultative, or anaerobic bioreactor.

CLAIM 3. The method according to claim 1, further comprising, before said step (a):

(d) transporting wastewater from a primary treatment apparatus to at least one bioreactor of a secondary treatment apparatus;

(e) said step (c) comprising recycling the released intracellular dissolved/organic matter back to said at least one bioreactor of said step (d).

CLAIM 4. The method according to claim 3, wherein said step (e) comprises delivering the destroyed biomass of said step (b) to one of: an aerobic, anoxic, facultative, or anaerobic bioreactor.

CLAIM 5. The method according to claim 3, wherein said secondary treatment apparatus further comprises a sludge dewatering apparatus; said step (c) further comprising;

(f) delivering the destroyed biomass of said step (b) to another bioreactor downstream from said at least one bioreactor and upstream of said sludge dewatering apparatus.

CLAIM 6. The method according to claim 5, wherein said step (f) comprises delivering the destroyed biomass of said step (b) to one of: an aerobic, anoxic, facultative, or anaerobic bioreactor.

CLAIM 7. The method according to claim 1, wherein said secondary treatment apparatus further comprises a sludge dewatering apparatus; said step (c) further comprising delivering the destroyed biomass of said step (b) to a bioreactor upstream of said sludge dewatering apparatus.

CLAIM 8. A method of treating wastewater comprising:

(a) delivering said wastewater to at least one bioreactor;

(b) digesting the waste water in said bioreactor, said bioreactor digesting the waste water to create a waste biological sludge including a plurality of cellular units and bound intracellular dissolved organic matter;

(c) delivering said waste biological sludge to an electroporation apparatus;

(d) electroporating said waste biological sludge in said electroporation apparatus by exposing said waste biological sludge to a pulsed electric field to disrupt said cellular units and to release said bound intracellular dissolved organic matter; and

(e) delivering said dissolved organic matter to at least one of: said at least one bioreactor and an alternative bioreactor for reaction therewith;

said step (e) comprising supplying said dissolved organic matter as food for said at least one bioreactor or said alternative bioreactor whereby the bioreactor digestion process is thus enhanced.

CLAIM 9. The method according to claim 8, wherein said step (e) comprises delivering said dissolved organic matter to at least one of: an aerobic, anoxic, facultative, or anaerobic bioreactor.

CLAIM 10. The method according to claim 8, further comprising:

(f) thickening said waste biological sludge before said step (d).

CLAIM 11. The method according to claim 8, further comprising:

(f) clarifying said waste biological sludge before said step (d).

CLAIM 12. The method according to claim 8, further comprising:

(f) after said step (e), delivering the digested waste biological sludge of said alternative bioreactor to a sludge-dewatering device for forming filter cakes thereby.

CLAIM 13. The method according to claim 12, wherein said step (e) comprises delivering said dissolved organic matter to said alternative bioreactor consisting of one of: an aerobic, anoxic, facultative, or anaerobic bioreactor.